

EXHIBIT N - PART 1

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

**CERTAIN COMPUTERS AND
COMPUTER PERIPHERAL DEVICE
AND COMPONENTS THEREOF AND
PRODUCTS CONTAINING SAME**

Inv. No. 337-TA-841

**ORDER NO. 23: ORDER CONSTRUING THE TERMS OF THE ASSERTED
CLAIMS OF THE PATENTS AT ISSUE**

(October 4, 2012)

I. INTRODUCTION

A *Markman* hearing was held August 9, 2012. Complainant Technology Properties Limited, LLC (“TPL”) and respondents Dell, Inc., Brother Industries, Ltd., Fujitsu Limited, Newegg Inc., Rosewill Inc., Seiko Epson Corporation, Acer, Inc., Canon Inc., Micron Technology, Inc., Lexar Media, Inc., Systemax Inc., HiTi Digital Inc., Shuttle Inc., Hewlett-Packard Co., and Kingston Technology, Inc. (collectively, “Respondents”) participated in the *Markman* hearing.

Prior to the hearing the parties filed opening and rebuttal claim construction briefs, establishing which terms required construing and offering various proposals for them. On August 17, 2012, TPL and Respondents submitted a Joint Proposed Claim Construction Chart (“Jt. Claim Chart”).

II. APPLICABLE LAW

Pursuant to the Commission’s Notice of Investigation, this investigation is a patent-based investigation. (*See* 77 Fed. Reg. 26041 (2012).) TPL asserts that Respondents infringe various

claims of the patents asserted in this investigation. A finding of infringement or non-infringement requires a two-step analytical approach. First, the asserted patent claims must be construed as a matter of law to determine their proper scope.¹ Claim interpretation is a question of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996); *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455 (Fed. Cir. 1998). Second, a factual determination must be made as to whether the properly construed claims read on the accused devices. *Markman*, 52 F.3d at 976.

In construing claims, the ALJ should first look to intrinsic evidence, which consists of the language of the claims, the patent's specification, and the prosecution history, as such evidence "is the most significant source of the legally operative meaning of disputed claim language." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *see also Bell Atl. Network Servs., Inc. v. Covad Comm'n. Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The words of the claims "define the scope of the patented invention." *Id.* And, the claims themselves "provide substantial guidance as to the meaning of particular claim terms." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006). It is essential to consider a claim as a whole when construing each term, because the context in which a term is used in a claim "can be highly instructive." *Id.* Claim terms are presumed to be used consistently throughout the patent, such that the usage of the term in one claim can often illuminate the meaning of the same term in other claims. *Research Plastics, Inc. v. Federal Pkg. Corp.*, 421 F.3d 1290, 1295 (Fed. Cir. 2005). In addition:

. . . in clarifying the meaning of claim terms, courts are free to use words that do not appear in the claim so long as the resulting claim interpretation . . . accord[s]

¹ Only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n.*, 366 F.3d 1311, 1323 (Fed. Cir. 2004); *Vivid Tech., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

with the words chosen by the patentee to stake out the boundary of the claimed property.

Pause Tech., Inc. v. TIVO, Inc., 419 F.3d 1326, 1333 (Fed. Cir. 2005).

Some claim terms do not have particular meaning in a field of art, in which case claim construction involves little more than applying the widely accepted meaning of commonly understood words. *Phillips*, 415 F.3d at 1314. Under such circumstances, a general purpose dictionary may be of use.² The presumption of ordinary meaning, however, will be “rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1091 (Fed. Cir. 2003).

Sometimes a claim term will have a specialized meaning in a field of art, in which case it is necessary to determine what a person of ordinary skill in that field of art would understand the disputed claim language to mean, viewing the claim terms in the context of the entire patent. *Phillips*, 415 F.3d at 1312-14; *Vitronics*, 90 F.3d at 1582. Under such circumstances, the ALJ must conduct an analysis of the words of the claims themselves, the patent specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, as well as the meaning of technical terms and the state of the art. *Id.*

Claim terms should generally be given their ordinary and customary meaning unless “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). “To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term . . .

² Use of a dictionary, however, may extend patent protection beyond that to which a patent should properly be afforded. There is also no guarantee that a term is used the same way in a treatise as it would be by a patentee. *Id.* at 1322.

.’” *Id.* (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). And “[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside . . . the patent,” even if the terms might otherwise be broad enough to cover that feature. *Id.* at 1366 (internal citation omitted). Thus, if a claim term is defined contrary to the meaning given to it by those of ordinary skill in the art, the specification must communicate a deliberate and clear preference for the alternate definition. *Kumar v. Ovonic Battery Co.*, 351 F.3d 1364, 1368 (Fed. Cir. 2003). In other words, the intrinsic evidence must “clearly set forth” or “clearly redefine” a claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term. *Bell Atl.*, 262 F.3d at 1268.

When the meaning of a claim term is uncertain, the specification is usually the first and best place to look, aside from the claim itself, in order to find that meaning. *Phillips*, 415 F.3d at 1315. The specification of a patent “acts as a dictionary” both “when it expressly defines terms used in the claims” and “when it defines terms by implication.” *Vitronics*, 90 F.3d at 1582. For example, the specification “may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.” *Phillips*, 415 F.3d at 1323. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316. However, as a general rule, particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. *Markman*, 52 F.3d at 979.

The prosecution history “provides evidence of how the inventor and the PTO understood the patent.” *Phillips*, 415 F.3d at 1317. For example, the prosecution history may inform the meaning of the claim language by demonstrating how an inventor understood the invention and

whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it otherwise would be. *Vitronics*, 90 F.3d at 1582-83; *see also Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) (stating, “The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.”); *Microsoft Corp. v. Multi-tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (stating, “We have held that a statement made by the patentee during prosecution history of a patent in the same family as the patent-in-suit can operate as a disclaimer.”). The prosecution history includes the prior art cited, *Phillips*, 415 F.3d at 1317, as well as any reexamination of the patent. *Intermatic Inc. v. Lamson & Sessions Co.*, 273 F.3d 1355, 1367 (Fed. Cir. 2001).

Differences between claims may be helpful in understanding the meaning of claim terms. *Phillips*, 415 F.3d at 1314. A claim construction that gives meaning to all the terms of a claim is preferred over one that does not do so. *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir.), *cert. denied*, 546 U.S. 972 (2005); *Alza Corp. v. Mylan Labs. Inc.*, 391 F.3d 1365, 1370 (Fed. Cir. 2004). In addition, the presence of a specific limitation in a dependent claim raises a presumption that the limitation is not present in the independent claim. *Phillips*, 415 F.3d at 1315. This presumption of claim differentiation is especially strong when the only difference between the independent and dependent claim is the limitation in dispute. *SunRace Roots Enter. Co., v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003). “[C]laim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous.” *AllVoice Computing PLC v. Nuance Commc’ns, Inc.*, 504 F.3d 1236, 1247 (Fed. Cir. 2007).

Finally, when the intrinsic evidence does not establish the meaning of a claim, the ALJ may consider extrinsic evidence, *i.e.*, all evidence external to the patent and the prosecution history, including inventor testimony, expert testimony and learned treatises. *Phillips*, 415 F.3d at 1317. Extrinsic evidence may be helpful in explaining scientific principles, the meaning of technical terms, and terms of art. *Vitronics*, 90 F.3d at 1583; *Markman*, 52 F.3d at 980. However, the Federal Circuit has generally viewed extrinsic evidence as less reliable than the patent itself and its prosecution history in determining how to define claim terms. *Phillips*, 415 F.3d at 1318. With respect to expert witnesses, any testimony that is clearly at odds with the claim construction mandated by the claims themselves, the patent specification, and the prosecution history should be discounted. *Id.* at 1318.

If the meaning of a claim term remains ambiguous after a review of the intrinsic and extrinsic evidence, then the patent claims should be construed so as to maintain their validity. *Id.* at 1327. However, if the only reasonable interpretation renders a claim invalid, then the claim should be found invalid. *See Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999).

The claim terms construed in this Order are for the purposes of this Section 337 investigation. Hereafter, discovery and briefing in this Section 337 investigation shall be governed by this construction of the claim terms. All other claim terms shall be deemed as undisputed and shall be interpreted by the ALJ in accordance with “their ordinary meaning as viewed by one of ordinary skill in the art.” *See Apex*, 325 F.3d at 1373.

III. THE '424, '443 AND '847 PATENTS

A. Background and Claims

1. U.S. Patent No. 7,522,424

U.S. Patent No. 7,522,424 (“the '424 Patent”) is entitled “SmartConnect Universal Flash Media Card Adapters.” The '424 Patent issued on April 21, 2009. The named inventors are

Sreenath Mambakkam, Arockiyaswamy Venkidu, and Larry Jones. TPL asserted claims 25, 26, 28, and 29. Claims 25 and 28 are independent claims and claims 26 and 29 depend on claims 25 and 28 respectively. The asserted claims are (with disputed terms in bold):

25. Apparatus comprising:

a housing having a port and a surface;

an **interconnection means** having a plurality of **interconnection pins**;

one or more sets of **contact pins mounted on said surface at locations adapted to interface with the electrical contacts of a corresponding one of a plurality of different types of memory media cards** when inserted into said port;

a set of signal lines connected to said interconnection pins;

means for identifying the type of memory card inserted into said port;

means for mapping power, ground or data signals between said interconnection pins and said one or more contact pins depending upon the identification of the type of memory card inserted into said port.

26. Apparatus according to claim 25 where the means for mapping comprises a controller.

28. Apparatus comprising:

a housing having a port and a surface;

a plurality of sets of **contact pins mounted on said surface at locations adapted to interface with the electrical contacts of a corresponding one of a plurality of different type memory media cards** when inserted into said port;

a set of signal lines connected to an **interconnection means**;

means for identifying the type of memory card inserted into said port;

means for mapping power, ground or data signals between said interconnection means and said one or more contact pins depending upon the identification of the type of memory card inserted into said port.

29. Apparatus according to claim 28 where said means for mapping comprises a controller.

2. U.S. Patent No. 7,295,443

U.S. Patent No. 7,295,443 (“the ’443 Patent”) is entitled “SmartConnect Universal Flash Media Card Adapters.” The ’443 Patent issued on November 27, 2007. The named inventors are Sreenath Mambakkam, Arockiyaswamy Venkidu, and Larry Jones. TPL asserted claims 1, 3, 4, 7, 9, 11, 12, and 14. Claims 1 and 9 are independent claims, claims 3, 4, and 7 depend on claim 1, and claims 11, 12, and 14 depend on claim 9. The asserted claims are (with disputed terms in bold):

1. A multi-memory media adapter comprising:

a first planar element having an upper surface and a lower surface, the first planar element comprising molded plastic;

a second planar element having an upper surface and a lower surface, the first planar element and the second planar element disposed such that a port is formed between the lower surface of the first planar element and the upper surface of the second planar element, the port capable of receiving a memory media card, the second planar element comprising molded plastic;

at least one set of contact pins protruding from the lower surface of the first planar element or the upper surface of the second planar element such that the at least one set of contact pins are disposed within the port, the at least one set of contact pins capable of contacting a set of memory media card contacts, wherein the at least one set of **contact pins are integrated within the molded plastic** of the first planar element or the second planar element; and

a controller chip **to map at least a subset of the at least one set of contact pins to a set of signal lines or power lines, based on an identified type of a memory media card.**

3. The multi-memory media adapter of claim 1 having a system connector surface-mounted thereon, the system connector electrically coupled to the at least one set of contact pins.

4. The multi-memory media adapter of claim 3 wherein the system connector is selected from the group comprising of a PCMCIA, USB, WiFi, Firewire, IDE, serial ATA connector, an IDE, and a CompactFlash connector.

7. The multi-memory media adapter of claim 1 having at least 18 contact pins configured to accommodate at least one of a group comprising, an xD, MMC/SD, Memory Stick, miniSD, RSMMC, and MS Duo.

9. A system comprising:

a **multi-memory media adapter** to read data from a plurality of memory media cards, the multi-memory media adapter having at least one port formed between an upper portion and a lower portion of the multi-memory media adapter, the port to receive a memory media card of the plurality of memory media cards;

a set of contact pins protruding from the upper portion or the lower portion, the set of contact pins to contact a set of memory media card contacts, wherein the set of **contact pins are integrated within molded plastic** of the upper portion or the lower portion; and

a controller **integrated into the multi-memory media adapter to map at least a subset of the set of contact pins to a set of signal lines or power lines, based on an identified type of the memory media card.**

11. The system of claim 9 further comprising a system connector, the system connector electrically coupled to the set of contact pins.

12. The system of claim 11 wherein the system connector is selected from the group comprising of a PCMCIA, USB, WiFi, Firewire, IDE, serial ATA connector, an IDE, and a CompactFlash connector.

14. The system of claim 9 having at least eighteen contact pins configured to accommodate at least one of a group comprising, an xD, MMC/SD, Memory Stick, miniSD, RSMMC, and MS Duo.

3. U.S. Patent No. 7,719,847

U.S. Patent No. 7,719,847 (“the ’847 Patent”) is entitled “SmartConnect Flash Card Adapter” issued on May 18, 2010, to Sreenath Mambakkam; Arockiyaswamy Venkidu; and Larry Jones. TPL has asserted Claims 1-3 of the ’847 patent. Claim 1 is an independent claim and claims 2 and 3 depend on claim 1. The asserted claims read as follow (with the disputed terms in bold):

1. Apparatus comprising:

a housing having a port and a surface;

a plurality of sets of **contact pins** mounted on said surface at locations adapted to interface with the electrical contacts **of a plurality of different type memory media cards** when inserted into said port;

a set of signal lines connected to a controller, the number of signal lines being fewer than the number of **contact pins**;

the signal lines located between the controller and an **interconnection means**;

said interconnection means being located between the signal lines and the plurality of sets of contact connecting said signal lines to said one or more **contact pins**; and

means for mapping power, ground or data signals between said signal lines and said contact pins depending upon the identification of the type of memory card inserted into said port;

wherein the means for mapping comprises a controller.

2. Apparatus according to claim 1 where said controller comprises **means for determining the type of memory card inserted into said port.**

3. Apparatus according to claim 1 wherein said interconnection means is selected from a group consisting of simple wires, flat cables, printed circuit board interconnections, or wiring traces.

B. Disputed Claim Terms

1. **“contact pins mounted on said surface at locations adapted to interface with the electrical contacts ...of memory media cards”³ (‘424 Patent claim 25 and 28, ‘847 Patent claim 1)**

TPL’s Proposal	Respondents’ Proposal
<p>Plain and ordinary meaning, no construction necessary</p> <p>In the alternative, if construed: contact pins positioned on said surface arranged to provide electrical connection with one of a plurality of different types of multimedia memory cards</p> <p>If the phrase “contact pins mounted on said surface...” is construed, “contact pins” should be construed as: “conductive</p>	<p>Contact pins that are affixed to a surface of the housing directly under or over the electrical contacts of cards when the cards are inserted into the port. A single set of contact pins interfaces with different types of memory media cards.</p>

³ The parties have agreed that this claim term should be construed consistently across all three claims. (ROB at 31, note 5.)

structures capable of contacting a set of memory media cards.	
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TPL argues that these phrases are readily comprehensible and do not require construction, but to the extent that the ALJ finds that construction is required, TPL argues that its construction is supported by the specification and the claims. (COB at 37-38.) TPL argues that Respondents' proposed construction drastically deviates from the claim language and the specification by improperly changing "mounted" to "affixed" and requiring that the contact pins be directly over or under the electrical contacts of the cards. (COB at 28-39.) TPL further argues that, to the extent that the claim term is construed, the claim term "contact pins" should also be construed to mean "conductive structures capable of contacting a set of memory media cards." (COB at 39-40.) TPL argues that its construction is supported by the specification of the '847, the '424 and the '443 Patents. (COB at 39.)

Respondents argue that their construction is supported by the specification, namely Figure 3 and the prosecution histories of the '847 and the '443 Patents. (ROB at 31-34.) Specifically, Respondents argue that Figure 3 of the specification "shows contact pins (315) that project perpendicularly from the surface of the planar elements (310, 320) of the adapter, and that are located directly under or over the electrical contacts of cards when the cards are inserted into the port" and, further, that the specification criticizes "floating pins." (ROB at 31-32.)

As for the prosecution history, Respondents cite to the prosecution history of the '847 Patent in support of their negative limitation, *i.e.*, "[a] single set of contact pins interfaces with different types of memory media cards." Respondents argue that because the applicant averred that "the claimed invention [] requires that a single set of contact pins interface with different types of memory media cards" then the term "must be construed to exclude contact pins that interface with only a single type of memory card." (ROB at 32.) Respondents further cite to the

prosecution history of the '443 Patent, which Respondents argue is relevant to the '424 Patent "[b]ecause they relate to the configuration of the contact pins," to argue that the term excludes contact pins that only interface with a single type of memory card and for expressly disclaiming contact pins that are "sitting on" a surface. (ROB at 32-33.)

Respondents further argue that TPL's construction contradicts the prosecution history of the '443 Patent since "positioned on" is no different from "sitting on" and fails to require that the contact pins are shared between different types of memory cards.

The ALJ finds that the claim term "contact pins mounted on said surface at locations adapted to interface with the electrical contacts ...of memory media cards" means contact pins mounted on said surface arranged to provide electrical connection with one of a plurality of different types of memory media cards. The claim language supports such a construction as it describes contact pins that are arranged to "interface with the electrical contacts" of a plurality of memory media cards. ('424 Patent, claim 25, claim 28; 847, claim 1.) The specification describes contact pins that "electrically couple to corresponding contacts on a memory media card inserted into [the] port." ('424 Patent at 5:21-23; '847 Patent at 5:8-10.)

The ALJ further finds that the specific term "mounted" is sufficient and need not be construed as either TPL or Respondents have proposed. The specification uses the term "mounted" throughout and, as used therein, does not alter the plain and ordinary meaning of the claim term. For example, the specification describes a standard connector "mounted" on to the planar element:

Adapter 300 includes planar element 330 that has standard connector 340 **mounted thereon**. Planar element 330 is adjacent to bottom planar element 320. Standard connector 340, which may be for example, a compact flash, PCMCIA, USB, or serial ATA connector is **surface-mounted** to planar element 330. Interconnects 312 that electrically connect the standard connector 340 to contact pins 315 are also located on planar element 330. The adapter connects the proper

pin from the contact pins to planar element 330. Simple wiring such as individual wires, flat cables, printed-circuit board (PCB), or wiring traces can be used. In accordance with an embodiment of the present invention, the need for a straddle-mounted PCB, and its associated manufacturing costs and complexity, is eliminated. Moreover, by eliminating the layers of a **straddle-mount** configuration, registration accuracy is improved. For one embodiment, a single PCB may comprise bottom planar element 320 and planar element 330.

(‘424 Patent at 5:37-53 (emphasis added); *see also* ‘847 Patent at 5:24-40.) While the specification describes different ways of mounting, it does not ultimately alter the plain and ordinary meaning of the word. Thus, reading the claims in light of the specification, it is clear that the plain and ordinary meaning of “mounted” needs no further construction. Therefore, the ALJ finds that the claim term means: contact pins mounted on said surface arranged to provide electrical connection with one of a plurality of different types of memory media cards.

The ALJ further agrees with TPL that “contact pins” means: conductive structures capable of contacting a set of memory media card contacts. As set forth *supra*, the specification describes contact pins that “electrically couple to corresponding contacts on a memory media card inserted into [the] port.” (‘424 Patent at 5:21-23; ‘847 Patent at 5:8-10.) The specification further describes “angled” or “curved” contact pins. (‘424 Patent at 5:30-36; ‘847 Patent at 5:20-23.) Respondents’ attempts to limit “contact pins that project perpendicularly from the surface of the planar elements” would improperly limit the claims to a preferred embodiment. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed. Cir. 2002) (“We have ‘cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.’”). Therefore, the ALJ finds that “contact pins” means conductive structures capable of contacting a set of memory media card contacts.

As for Respondents’ remaining arguments, the ALJ finds those unpersuasive. First, as noted above, Respondents improperly limit the claim term to a preferred embodiment. *Teleflex*,

299 F.3d at 1328. The specification makes clear that Figure 3 is only one embodiment of the invention and, further, the specification repeatedly discloses other alternatives and embodiments.

Furthermore, Respondents' construction directly contradicts the specification which describes contact pins that are angled or curved. (*See* '424 Patent at 5:30-36; '847 Patent at 5:24-40.) As for Respondents' proposed limitation that "[a] single set of contact pins interfaces with different types of memory media cards," the ALJ also finds Respondents' arguments unpersuasive. First, such a construction clearly contradicts the language of the claims 25 and 28 of the '424 Patent and claim 1 of the '847 Patent:

[O]ne or more sets of contact pins mounted on said surface at locations adapted to interface with the electrical contacts of a corresponding one of a plurality of different types of memory media cards when inserted into said port ('424 Patent, claim 25)

[A] plurality of sets of contact pins mounted on said surface at locations adapted to interface with the electrical contacts of a corresponding one of a plurality of different types of memory media cards when inserted into said port ('424 Patent, claim 28)

[A] plurality of sets of contact pins mounted on said surface at locations adapted to interface with the electrical contacts of a plurality of different type memory media cards when inserted into said port ('847 Patent, claim 1)

(('424 Patent, claims 25 and 28; '847 Patent claim 1)(emphasis added).) The claim language claims "one or more" or "a plurality" of contact pins and limiting the phrase to a "single set of contact pins" makes little sense when read in the context of the claims. The ALJ further finds Respondents' reliance on the prosecution history to be unpersuasive as well. Respondents argue that the following statements from the applicant to overcome prior art references during the prosecution of the '847 Patent and the '443 Patent further limit the claim⁴:

⁴ Respondents assert that the prosecution history of the '443 Patent is relevant to the meaning of this claim term in the '424 Patent because they cover the same subject matter as the claim language at issue—they relate to the configuration of contact pins. (ROB at 33.) TPL does not dispute this.

[T]he claimed invention [] requires that a single set of contact pins interface with different types of memory media cards. ('847 Patent, Prosecution History)

Hung-Ju suggests using different sets of contact pins for different types of memory cards. ('443 Patent, Prosecution History)

(ROB at 33.) The ALJ finds that the applicant's statements do not rise to a "clear and unambiguous disavowal" such that prosecution history would limit the claims. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009) ("A disclaimer must be "clear and unmistakable," and unclear prosecution history cannot be used to limit claims."). This is especially true in light of the actual language of the claims, *i.e.*, "one or more" and "a plurality" of sets of contact pins.

Therefore, the ALJ finds the claim term means contact pins mounted on said surface arranged to provide electrical connection with one of a plurality of different types of memory media cards. The ALJ also finds that "contact pins" means conductive structures capable of contacting a set of memory media card contacts.

2. "interconnection means"/ "interconnection pins"

TPL's Proposal	Respondents' Proposal
<p><u>"interconnection means":</u> Subject to 35 U.S.C. §112 ¶6.</p> <p><u>Function:</u> "connecting the contact pins to a set of signal lines"</p> <p><u>Structure for the '424 Patent includes at least the following:</u> Fig. 2, item 212; 2:8-31; Fig. 3, item 312; 5:37-53; Fig. 5; 6:32-35, claims 25 and 28; and equivalent structures</p> <p><u>Structure for the '847 Patent includes at least the following:</u> Fig. 2, item 212; 1:62-2:18; Fig. 3, item 312; 5:23-40; Fig. 5; 6:19-22; claims 1 and 3; and equivalent</p>	<p><u>"interconnection means":</u> Interconnection pins</p> <p><u>"interconnection pins":</u> Conductive pins separate from the contact pins</p>

<p>structures</p> <p>“interconnection pins”: Plain and ordinary meaning, no construction necessary.</p> <p>In the alternative, if construed: “Conductive structure that connect the contact pins to a set of signal lines”</p>	
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TPL argues that “interconnection means” is subject to 35 U.S.C. §112 ¶6 because it contains the word “means.” (COB at 10.) TPL argues that the function is “connecting contact pins to a set of signal lines” and cites the following claim language to support its construction:

... plurality of **sets of contact pins** ...
the **signal lines** located **between the controller and an interconnection means**;
said **interconnection means** being located between the signal lines and the plurality of sets of contact **connecting said signal lines to said one or more contact pins** ...

‘847 patent (Ex. D), cl. 1.

... an **interconnection means** having a plurality of **interconnection pins**;
one or more sets of contact pins ...
a set of signal lines connected to said interconnection pins ...
means for **mapping** ... **data signals between said interconnection pins and said one or more contact pins** ...

‘424 patent (Ex. C), cl. 25.

... a plurality of sets of **contact pins** ...
a set of **signal lines** connected to an interconnection means ...
means for **mapping** ... **data signals between said interconnection means and said one or more contact pins** ...

Id. at cl. 28

(COB at 10-11.) TPL then argues that certain figures, portions of the specification and the claims disclose the corresponding structure. (COB at 11-14.) TPL argues that Respondents’

proposed construction is incorrect because it improperly limits “interconnection means” to “interconnection pins,” which would contradict claim 3 of the ‘847 Patent. (COB at 14.)

Respondents argue that “interconnection means” should be construed as “interconnection pins.” (ROB at 55.) Respondents cite the claim language in support of their construction, namely claim 25. (*Id.*) Respondents further argue that the interconnection pins must be separate from the contact pins since the claims require that the signal lines be mapped between the two. (ROB at 55.)

Respondents argue that “interconnection means” is not a means-plus-function claim because the claims do not define a function and because claim 25 includes a recitation of structure. (ROB at 54.) Respondents further argue that, even assuming “interconnection means” is a means-plus-function claim, TPL’s proposed construction is incorrect since the function is not found in the claims and the corresponding structure does not perform the function. (ROB at 54-55.) Respondents further argue that TPL’s proposed limitation contradicts the intrinsic evidence.

The ALJ finds that “interconnection means” is not a means plus function claim. TPL’s construction of this term under Section 112, ¶ 6 fails because (1) the claims sufficiently recite either a structure or location; (2) the function cited by TPL cannot be found in the claims and (3) none of the structures cited by TPL performs the function of “connecting the contact pins to a set of signal lines.”

The claimed function cited by TPL, namely “connecting the contact pins to a set of signal lines” is not in the claims of the ‘424 Patent. *JVW Enters. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005) (“a court may not construe a means-plus-function limitation by adopting a function different from that explicitly recited in the claim”). In fact, the phrase “connecting the contact pins to a set of signal lines” does not appear anywhere in claims 25 or 28

of the '424 Patent. TPL proposed function appears to be a collection of selected portions of different limitations from claims 25 and 28 of the '424 Patent. The term "interconnection means" is used in the first limitation of claim 25 and contains no functional language: "an interconnection means having a plurality of interconnection pins." ('424 Patent, claim 25.) The remaining excerpts from claim 25 that TPL relies upon refer to those "interconnection pins," not the "interconnection means." Moreover, the only functional language that TPL cites in this claim is the phrase "mapping power, ground or data signals between said interconnection pins and said one or more contact pins." However, this phrase relates to the separate means-plus-function term "means for mapping." Thus, the phrase relied upon by TPL relates to a different claim term and, further, recites a different function, namely mapping signals between the interconnection pins and the contact pins, not "connecting the contact pins to a set of signal lines."

Similarly, the claimed function appears nowhere in claim 28, which includes a "means for mapping" limitation akin to the one found in claim 25 ("mapping power, ground or data signals between said interconnection means and said one or more contact pins"). Again, this phrase requires mapping signals between the "interconnection means" and the contact pins and not "connecting the contact pins to a set of signal lines." TPL's proposed function finds no support in either claim 25 or 28 of the '424 Patent.

While claim 1 of the '847 Patent does recite "connecting said signal lines to said one or more contact pins," the same claim language relied upon by TPL also discloses the location of "interconnection means":

said interconnection means being located between the signal lines and the plurality of sets of contact connecting said signal lines to said one or more contact pins...

(‘847 Patent at 8:43-45.) The inclusion of a description of location weighs against construing this term as a means-plus-function limitation. *See Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996) (holding that the term “perforation means” was not a mean-plus-function limitation because “[t]he claim describes not only the structure that supports the tearing function, but also its location”); *Evirco Corp. v. Clesta Cleanroom, Inc.*, 209 F.3d 1360, 1365 (Fed. Cir. 2000) (“Because the claims recite sufficient structure, including details about the location and formational details about the second baffle, this court holds that the district court erred in construing the ‘second baffle means’ as a mean-plus-function claim element under 112, ¶ 6.”).

Furthermore, the ALJ finds that TPL failed to identify a structure that performs the proposed function. The portions of the specification cited by TPL fail to disclose a structure that “connect[s] the contact pins to a set of signal lines.” The block of text related to Figure 2 describes prior art –a contemporary “standard commercial product.” (‘424 Patent, 2:8-31.) TPL’s citation to the description of Figure 3 also fails to identify a structure that “connect[s] the contact pins to a set of signal lines.” Rather, the specification describes “[i]nterconnects (312) that electrically connect the *standard connector 340* [not the signal lines] to contact pins 315 and the adapter “connects the proper pin from the contact pins to the planar element.” (‘424 Patent at 5:42-47; *see also* ‘847 Patent, 5:29-34) (emphasis added). As for Figure 5, the specification states that it is a table of pin mappings.” (‘424 Patent at 6:32-35, ‘847 Patent at 6:19.) Thus, the blocks of text cited by TPL fail to disclose any structure corresponding to the supposed function of the “interconnection means.”

Thus, TPL fails to identify any corresponding structure in either the ‘424 Patent or the ‘847 Patent that performs the function of “connecting contact pins to a set of signal lines.”

Therefore, the ALJ finds that “interconnection means” is not a means-plus-function claim for either the ‘424 Patent or the ‘847 Patent.

The ALJ finds that “interconnection means” should be construed to mean “conductive structures separate from contact pins.”⁵ The specification supports such a construction as it describes “[i]nterconnects 312 that *electrically connect* the standard connector 340 to contact pins 315.” (‘424 Patent at 42-43; ‘847 Patent at 5:29-30) (emphasis added). The claim language in both the ‘424 Patent and the ‘847 Patent also support such a construction. Claims 25 and 28 clearly indicate that the “interconnection means” is a “separate and distinct” structure from the connection pin. Claims 25 and 28 require a “means for mapping” between “interconnection pins/means” and contact pins. (‘424 Patent claim 25 and 28.) Thus, in order to map signals between “interconnection pins/means” and contact pins, “interconnection pins/means” and contact pins must be separate and distinct structures. Similarly, claim 1 of the ‘847 Patent claims an “interconnection means” that “connect[s] said signal lines to one or more contact pins.”

The ALJ finds Respondents’ proposed construction to be too limiting. While claim 25 of the ‘424 Patent identifies “interconnection means having a plurality of interconnection pins,” the ALJ finds nothing that would require limiting the definition of “interconnection means” to “interconnection pins.” Rather, the ALJ’s construction, “conductive structures separate from contact pins” would include “interconnection pins.” The ALJ finds that the identification of “interconnection pins” in claim 25 means that the “interconnection means” must have “interconnection pins” for claim 25, but does not similarly limit “interconnection means” to “interconnection pins” in claim 28. Indeed, had the patentee intended to limit the “interconnection means” in claim 28 to “interconnection pins” it easily could have done so as it

⁵ The parties have agreed to construe the claim term consistently across all claims.

did in claim 25. Furthermore, there is nothing in claim 1 of the '847 Patent (as there was in claim 25 of the '424 Patent) that would support limiting "interconnection means" to "interconnection pins." Indeed, as TPL correctly notes, claim 3 states that "said interconnection means is selected from a group consisting of simple wires, flat cables, printed circuit board interconnections, or wiring traces." The ALJ's construction, "conductive structures separate from the contact pins" would include the structures set forth in claim 25 of the '424 Patent and claim 3 of the '847 Patent.

The ALJ further finds that "interconnection pins" means "conductive pins separate from the contact pins." The ALJ finds TPL's proposed construction, "conductive structures that connect the contact pins to a set of signal lines," to be too broad. The claims specifically call for pins and TPL has failed to point to anything in the specification or the claims that would indicate that "pins" in "interconnection pins" should be given anything but its plain and ordinary meaning. Therefore, the ALJ finds that "interconnection pins" means "conductive pins separate from the contact pins."

3. "contact pins are integrated within [the] molded plastic"

TPL's Proposal	Respondents' Proposal
<p>Plain and ordinary meaning, no construction necessary</p> <p>In the alternative, if construed: contact pins are at least partially enclosed by molded plastic</p>	<p>Contact pins that are embedded within the upper or lower portion, each of which is made of molded plastic. The term "contact pins" cannot extend to either pins that sit on the exterior or interior surfaces of a housing or to floating pins</p>

TPL argues that the claim term does not need construing as it is readily comprehensible and the plain and ordinary meaning is sufficient. (COB at 33.) However, to the extent that the claim term needs to be construed, it should mean "contact pins that are partially enclosed by molded plastic." (COB at 34.) TPL argues that Respondents' proposed construction is incorrect

since it injects the requirement that both the upper and lower portion of the adapter be made of molded plastic, which is not required by claim 9; claim 1 does not claim an “upper” or “lower” portion; and it improperly injects negative limitations into the claim. (COB at 34.)

Respondents argue that the specification teaches away from floating contact pins found in the prior art and that the prosecution history contains an express disclaimer of such pins. (ROB at 26.) The specification specifically states that the alleged invention “provide[s] an adapter card with contact pins that retain their resiliency to a greater degree than floating contact pins” and that the contact pins “are less likely to be damaged upon removal of the memory card.” (ROB at 27.) Respondents further argue that the applicant expressly disclaimed “floating” pins during the prosecution of the ‘443 Patent. (ROB at 28.) The Examiner rejected all pending claims as being anticipated by prior art, Hung-Ju, which the Examiner found disclosed contact pins integrated within molded plastic. (ROB at 28-29.) In response, the Applicant stated that the contact pins of Hung-Ju

[a]re of a floating structure sitting on an exterior or interior surface of the upper and lower frames 102 rather than being “integrated within” the two planar elements, as recited in Applicants independent claims 1 and 12.

(ROB at 29 (citing prosecution history of the ‘443 Patent.) Thus, Respondents argue that “the Applicant express disclaimed from the meaning of ‘integrated within’ any contact pins that are a ‘floating structure sitting on the exterior or interior surface’ of the housing like those disclosed in Hung-Ju.” (ROB at 29.) Respondents further argue that TPL’s construction contradicts the intrinsic evidence because it does not exclude the floating contact pins of the prior art and it is inconsistent with the description of contact pins in the specification. (ROB at 30.)

The ALJ finds that the term “contact pins integrated within [the] molded plastic” means “contact pins embedded within the molded plastic.” The claim language and the specification

support such a construction. First, the claim language clearly states that the contact pins are “integrated *within*” (emphasis added) molded plastic, which implies that the contact pins are more than simply sitting on the exterior or interior surface of the molded plastic. Furthermore, the specification describes the contact pins as being embedded in the molded plastic:

For an embodiment in which the planar elements 310 and 320 are formed from molded plastic, contact pin sets 315 may be formed from injected contacts with protruding pins. This provides a more robust contact pin than the floating contact pins of the prior art, thereby lessening the likelihood that the resiliency of the contact pin will be reduced to the point that the pin no longer contacts the inserted memory media card. Alternatively, or additionally, the contact pins may be angled or shaped such that damage due to the abrupt removal of an improperly (or properly) inserted card is reduced or eliminated. For example the terminal end of the contact pin may be angled or curved toward the planar surface from which the contact pin protrudes, or may be spherically shaped.

* * *

Further, by embedding the contacts in a plastic injection, such problems as metal fatigue, travel, etc., can be controlled much better, improving dramatically the life-cycle time for the port side connection.

(’443 Patent at 5:24-37 and 7:67-8:3.) Therefore, the ALJ finds that this claim term means “contact pins embedded within molded plastic.”

The ALJ finds neither TPL’s or Respondents’ proposed construction acceptable. TPL cited no support in the claim language, the specification or the prosecution history for its construction that the contact pins be “partially enclosed.” As for Respondents’ construction, the ALJ disagrees that the specification teaches away from and the prosecution history disclaims floating pins. While the specification does tout the advantages of the present invention of using “integrated” contact pins over floating pins, the ALJ finds that it does not rise to the level of a clear disavowal as asserted by Respondents. *Thorner*, 669 at 1366 (citations omitted) (“Mere criticism of a particular embodiment encompassed in the plain meaning of a claim term is not

sufficient to rise to the level of clear disavowal.”) Similarly, in distinguishing the present invention over Hung-Ju, the ALJ finds that the Applicant’s statement does not rise to the level of a “clear disavowal”. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009) (“A disclaimer must be “clear and unmistakable,” and unclear prosecution history cannot be used to limit claims.”) Furthermore, the ALJ finds Respondents’ negative limitations to be redundant of the ALJ’s construction as contact pins that are “embedded within” molded plastic cannot extend to pins that sit on surfaces.

4. “integrated into the multi-memory adapter”

TPL’s Proposal	Respondents’ Proposal
<p>This term requires not construction</p> <p>In the alternative, if construed, the plain and ordinary meaning of the claim term is: contained in the multi-memory media adapter</p>	<p>Embedded into the molded plastic of the adapter</p>

TPL argues that the claim term need not be construed as it is readily comprehensible. (COB at 40.) TPL argues that if the claim term is construed, then it means contained in the multi-memory media adapter. (COB at 40.) TPL argues that the specification supports its construction because it “states that in one embodiment the controller chip may be ‘integrated into the adapter rendering the adapter a complete card reader.[sic.] That is, the adapter becomes a complete card reader because it contains the controller chip.” (COB at 41.) TPL further argues that Respondents’ construction is wrong since it requires that the controller chip be integrated into molded plastic, which is not required by either the claims or the specification. (COB at 41.)

Respondents argue that the claim term means embedded into the molded plastic of the adapter. Respondents argue that the term “integrated” should be interpreted to be consistent with across all of the claim terms in the same patent and, therefore, “integrated” means “embedded.”

(ROB at 35.) Respondents argue that the specification supports its construction because it describes an adapter formed from a single piece of molded plastic “with the controller chip and associated memory device (e.g. ROM) embedded into the molded plastic.” (ROB at 35.)

The ALJ finds that “integrated within the multi-memory media adapter” means embedded in the multi-memory media adapter. As Respondents correctly note, the Federal Circuit has held that claim terms should be construed consistently across limitations and claims within the same patent, absent any evidence to the contrary. *Southwall Techs., Inc. v. Cardinal IG, Co.*, 54 F.3d 1570, 1578-79 (Fed. Cir. 1995). The ALJ construed “integrated” in the previous section to mean “embedded” and there is no evidence to that the claim term should not be given the same meaning in the context of this claim term. Therefore, the ALJ will construe “integrated” to mean “embedded.”

However, the ALJ rejects Respondents’ efforts to read additional limitations into the claim. This claim element uses “integrated” (or “embedded”) very broadly. Thus, the ALJ finds that the controller need not be embedded in molded plastic, but need only be embedded in the multi-memory media adapter as required by the claim language. First, there is no such requirement in the explicit language of the claims. Unlike claim 1 where the claims explicitly called for “molded plastic” for both planar elements, the only reference to “molded plastic” in claim 9 is “wherein the set of contact pins are integrated within the molded plastic of the upper portion or the lower portion.” (‘443 Patent, claim 9; *see also* claim 1.) In other words, only the upper portion or the lower portion that contains the embedded contact pins needs to be formed of molded plastic—there is nothing in claim 9 that requires the multi-memory media adapter to be formed of molded plastic. Second, while the specification does describe one embodiment where the controller is embedded in molded plastic, it is improper to limit the claim terms to a single

embodiment. *Teleflex, Inc.*, 299 F.3d at 1328. Therefore, the ALJ finds that “integrated into the multi-memory media adapter” means embedded in the multi-memory media adapter.

The ALJ finds TPL’s arguments unpersuasive. Specifically, the portion of the specification cited by TPL, namely “the controller and associated memory device are integrated into the adapter rendering the adapter a complete card reader,” fails to support its proposed construction. TPL fails to explain how that cited portion supports its construction of “contained in.” Furthermore, TPL fails to explain how or why the ALJ should construe “integrated” to have two separate meanings across claims (claim 1 and 9) and within the same claim (“contact pins integrated with molded plastic” and “a controller integrated into the multi-memory media adapter”).

Therefore, the ALJ finds that “integrated into the multi-memory media adapter” means embedded in the multi-memory media adapter.

5. **“to map at least a subset of the at least one set of contact pins to a set of signal lines or power lines, based on an identified type of the memory media card” (‘443 patent, cl. 1)/“to map at least a subset of contact pins to a set of signal lines or power lines based on an identified type [of] the memory media card” (‘443 patent, cl. 9)**

TPL’s Proposal	Respondents’ Proposal
<p>Plain and ordinary meaning, no construction necessary.</p> <p>In the alternative, if construed:</p> <p>“to assign a group of contact pins to power, ground, or data signal lines based on type of memory media card inserted”</p>	<p>To selectively connect at least one contact pin to one of two or more different signal lines or power lines based upon the type of memory media card identified by the controller. At least one set of contact pins is used for different types of memory cards.</p>

Respondents argue that this claim term “unequivocally refers to a dynamic selection and subsequent connection of one of multiple signal lines or power lines to a single contact pin, based upon the specific type of memory inserted into the slot and identified by the controller.”

(ROB at 14.) Specifically, Respondents contend that mapping “cannot simply mean a passive, pre-selected, fixed assignment of signal lines or power lines to various pins because that is exactly what the Applicant said it did *not* mean during prosecution to overcome the prior art.” (ROB at 14 (emphasis in the original).)

Respondents make three main arguments in support of their construction. First, Respondents argue that the claim language supports their construction because the claim language requires that the controller perform the mapping based on the identity of the memory card. (ROB at 14.) Respondents assert that under the claim language, “the controller first identifies what type of card is inserted into the slot, and then selectively connects a contact pin to one of multiple signal lines or power lines depending upon the type of card identified.” (ROB at 15.) Respondents contend that this language requires that “[t]he contact pins *cannot* be passively assigned or fixed to signal lines or power lines such that a single contact pin is always connected to the same line....” (ROB at 15 (emphasis in original).) Second, Respondents argue that the specification provides little guidance because the specification discusses only that the controller can “differentiat[e] pin configurations” and does not discuss mapping. (ROB at 15-16.) Finally, Respondents argue (and rely most heavily on) the prosecution history. They argue that during the prosecution, Applicants explained that the prior art, in contrast to the alleged inventions claimed in the asserted patents, “utilizes a different set of contact pins for each type of memory card (i.e., no shared pins), such that no switching is required, and connections between contact pins and signal lines or power lines are predetermined and do not change.” (ROB at 16.) Respondents assert that their construction “appropriately captures both (i) the requirement that the controller *actively* or *dynamically* selects the signal lines or power line to be connected to the contact pin in response to the type of card inserted and detected, and (ii) Applicant’s explicit

disclaimer of having a different set of contact pins for each type of memory card.” (ROB at 18-19.)

As for TPL’s construction, Respondents argue that it deviates from the intrinsic evidence and improperly attempts to recapture subject matter disclaimed during prosecution. (COB at 19.) Respondents assert that “[e]quating ‘to map’ with ‘to assign’ as TPL suggests would eviscerate the critical and necessary distinction that the Applicant made between the asserted claims and [the prior art].” (COB at 19.) Respondents contend that even the specific prior art references that Applicants distinguished would meet TPL’s construction of the mapping limitation. Respondents argue that assigning contact pins to power lines or signal lines can be done in advance of any card being asserted. (COB at 19.)

TPL contends that the plain and ordinary meaning of this claim term is apparent and that no construction is necessary. TPL specifically disputes two parts of Respondents construction: (1) the requirement that there be “two or more different signal lines or power lines;” and (2) the requirement that mapping be “selectively connecting.” First, TPL argues that the claim language states that the mapping be of “at least a subset of contact pins to a set of[:] signal lines *or* power lines.” (CRB at 1 (emphasis in the original).) TPL asserts that a person of ordinary skill would understand that this set could consist of two signal lines and one power line or one signal line and one power line. (CRB at 2.) Thus, TPL argues that Respondents’ requirement of “two or more” power lines is improper. (CRB at 2.) In addition, TPL argues that the specification discloses an embodiment where only one power line may be required. (COB at 2 (citing ’443 Patent at Fig. 4).)

Second, TPL argues that replacing “to map” with “to selectively connect” would inject ambiguity into the claims. TPL argues that Respondents seek to add this term because

Respondents contend that “unless ‘selectively connecting is written into the claims, the claim would be read to allow ‘mapping . . . based on an identified type of memory card’ in advance of a card being inserted into the port.” (CRB at 2.) TPL responds that “the plain and ordinary meaning of this phrase already captures the requirement of a controller to ‘map . . . contact pins . . . to a set of signal line or power lines based upon the identified type of memory card.” (CRB at 2.) Thus, TPL contends that the claims already contain this limitation. TPL asserts that Respondents construction could be interpreted to mean that the controller must “physically connect the contact pins to different signal lines inserted into the port, which would be akin to throwing a switch in a railroad track that connects one track to another.” (CRB at 3.) TPL argues that this is not required and that the mapping involves logically, not physically, assigning contact pins to power, ground, or data lines. (CRB at 3.)

The ALJ finds that the parties are in fact relatively close in their constructions, both of which largely mirror the claim language itself. First, TPL concedes that a fixed assignment is contrary to plain language of the claims, so Respondents’ concerns regarding the use of the word “assigning” to recapture claim scope or as an effort by TPL to contend that fixed assignments of contacts to signals is without foundation. (See CRB at 4 (“Respondents argue that TPL’s proposal would allow thee contact pins to be mapped or assigned to the signal lines in advance of any card being inserted. This is false. TPL proposed a construction of ‘to map . . . *based on type of memory media card inserted.*’”). Second, Respondents appear to concede that the mapping is a logical function and does not require some physical connection be changed in the device in order to accomplish it. Thus, TPL’s concerns that the phrase “selectively connecting” will be used by Respondents to argue that the controller must physically connect the contact pins to different signal lines is also without foundation. From this discussion, it appears that there is

little value in either parties' construction because they seem to largely agree on what "map" means within the art and both constructions appear to only replace "map" with another word. But neither word appears to add much to the clarity of the claims.

The ALJ agrees with TPL, however, that Respondents' requirement that there be "two or more different signal lines or power lines" is contrary to the claim language. The claim language merely requires that mapping occur between a subset of the contact pins and "signal lines or contact lines." Thus, there is no requirement in the claim language that there be "two or more different signal lines or power lines." Indeed, if the mapping is accomplished logically it is possible that there could be only one signal line and one power line as TPL suggests or two signal lines and one power line. Further, the specification supports TPL's argument. As TPL notes, Figure 4 of the specification discloses an embodiment with only one power line. That suggests that reading in the "two or more different signal lines or power lines" limitation suggested by Respondents would be incorrect. *See Interdigital Commc'ns, Inc. v. Int'l Trade Comm'n*, --- F.3d ----, 2012 WL 3104597, at *7 (Fed. Cir. Aug. 1, 2012).

As for the prosecution history, the ALJ does not discern the broad disclaimer Respondents suggest, and so the ALJ declines to read in the additional limitations that Respondents seek. During the prosecution, the examiner rejected the asserted claims of the '443 Patent as anticipated by U.S. Patent No. 6,402,558 to Hung-Ju et al. ("Hung-Ju"). The examiner argued that Hung-Ju disclosed the original claim limitation that merely required that the controller chip be "operable to differentiate a pin configuration based on an asserted memory media card." The Applicants amended the claim to eliminate the "differentiate" language recited above and replaced it with the current "map" limitation that is in dispute. The Applicants further argued to the examiner that Hung-Ju did not contain a suggestion or teaching of a controller chip

to “map at least a subset of the at least one set of contact pins to a set of signal lines or power lines.” (Exhibit 7 at TPL002554.) Applicants explained that Hung-Ju disclosed physically positioning contact pins and entrance slots in various locations for different types of memory cards. (Exhibit 7 at TPL002554-55.) Applicants further explained that “Hung-Ju teaches away from the claim limitation using a controller chip to ‘*map at least a subset of the at least one set of contact pins to a set of signal or power lines*’ where one set of pins is mapped to different signals depending on the type of identified memory card, as recited in Applicant’s independent claims 1 and 12.” (*Id.* at TPL002555 (emphasis in the original).) As Respondents explain in their brief, Hung-Ju involved a device with different slots for different types of memory cards. (COB at 17.) Each of these slots had their own dedicated signal and power lines. (*Id.*) However, this simply does not discuss or support Respondents’ contention that there must be “two or more different signal lines or power lines.”

As for Respondents requirement that “[a]t least one set of contact pins is used for different types of memory cards,” this proposed limitation is similar to the statement quoted above from the prosecution history that “where one set of pins is mapped to different signals depending on the type of identified memory card.” However, it is also slightly, and inexplicably, different. The ALJ is unclear what exactly the difference is (if there is one) between the undisputed requirement that “one set of pins is mapped to different signals depending on the type of identified memory card” described in the prosecution history and Respondents’ proposed limitation. Respondents provide no illumination in their brief. In any event, TPL does not appear to contest that at least some of the contact pins must be shared by the different memory card types, which seems to be the concept this sentence of Respondents’ construction is aiming to capture. (*See* RRB at 3 (“Moreover, Hung-Ju teaches that no contact pins are shared.

Therefore, there is no indication that Hung-Ju teaches mapping based on the identified card type.”). Thus, it is clear that at least some of contact pins must be shared although the signals mapped to those shared contact pins may be different. This is supported by the plain meaning of the claim language and confirmed by the statements in the prosecution history.

Finally, there appears to be one other difference between the proposed constructions. TPL’s construction proposes the assigning (or mapping) be to “a group of contact pins,” while Respondents’ construction maps to “at least one contact pin” to the power or signal lines. Respondents argue that TPL’s proposal would render “subset” in the claim term superfluous because “group of pins” is broad enough to encompass the entire set of pins. (ROB at 15.) TPL argues that this is consistent with the claim language that only requires a controller chip to map “at least a subset of contact pins.” (CRB at 4.) TPL is correct. The claim language only states “at least a subset.” It does not require “a subset” as Respondents appear to contend. Indeed, even their own construction that requires “at least one contact pin” could include all of the contact pins. Thus, Respondents argument makes little sense.

In the end, the ALJ finds it makes little sense to simply re-write the claims. This is particularly the case when the claim language is as detailed as it is in this case and the claim language appears to more accurately capture the meaning of the element than either proposed construction. As discussed above, the ALJ finds that Respondents’ proposed construction is largely inconsistent with the intrinsic evidence, and would serve to confuse more than clarify. Indeed, a number of the concerns expressed by Respondents have turned out not to be disputed by TPL. In light of the above resolution of the parties’ perceived disputes, the ALJ finds that the plain and ordinary meaning should govern. However, for absolute clarity, the ALJ does believe that some gloss on the claim term is necessary. The limited clarification is that the mapping

must occur based on the type of memory card inserted as conceded by TPL. Thus, the ALJ construes “to map at least a subset of the at least one set of contact pins to a set of signal lines or power lines, based on an identified type of the memory media card” and “to map at least a subset of contact pins to a set of signal lines or power lines, based on an identified type [of] the memory media card” to have its plain and ordinary meaning as outlined above and with the caveat that the mapping must occur based on the type of memory card inserted. This construction is also subject to the discussion above.

6. (A) “means for mapping power, ground or data signals between said interconnection pins and said one or more contact pins depending upon the identifying of the type of memory card inserted into said port” (‘424 patent, cl. 25)

(B) “means for mapping, power, ground or data signals between said interconnection means and said one or more contact pins depending upon the identification of the type of memory card inserted into said port” (‘424 patent, cl. 28)

(C) “means for mapping power, ground or data signals between said signal lines and said contact pins depending upon the identification of the type of memory card inserted into said port” (‘847 patent, cl. 1)

These three phrases are addressed together because they are substantially similar.

TPL’s Proposal ⁶	Respondents’ Proposal
Means-plus-function elements, subject to 35 U.S.C. §112, ¶ 6.	Means-plus-function elements, subject to 35 U.S.C. §112, ¶ 6.
(A) “means for mapping power, ground or data signals between said <u>interconnection pins</u> and said one or more contact pins depending upon the identification of the type of memory card inserted into said port”	<u>Function</u> : Mapping power, ground or data signals between said [interconnection pins / interconnection means / signal lines] and said one or more contact pins depending upon on the identification of the type of memory card inserted into said port
<u>Function</u> : “assigning power, ground and/or data signals to a plurality of interconnection pins and one or more contact pins based on	“mapping ... depending upon the identification of the type of memory card

⁶ The main differences between the three phrases being construed are underlined in this table.

<p>the type of memory card”</p> <p><u>Structure includes at least the following:</u> '424 patent Fig. 4; Fig. 5: 5:54-6:63; and equivalent structures.</p> <p><u>Description of the structure:</u>⁷ “a controller that can change one or more signals provided to one or more contact pins via one or more signal lines depending on card type.”</p> <p>(B) “means for mapping power, ground or data signals between said <u>interconnection means</u> and said one or more contact pins depending upon the identification of the type of memory card inserted into said port”</p>	<p>inserted into said port” in the context of these claims means:</p> <p>selectively connecting at least one contact pin to one of two or more different [interconnection pins / interconnection means / signal lines] based upon the type of memory media card identified by the controller. At least one set of contact pins is used for different types of memory cards.</p> <p><u>Structure:</u> A controller programmed in accordance with an algorithm disclosed in the specification</p> <p>This term is indefinite.</p>
<p><u>Function</u> “assigning power, ground and/or data signals to said interconnection means and one or more contact pins based on the type of memory card”</p> <p><u>Structure includes at least the following:</u> '424 patent Fig. 4; Fig. 5; 5:54-6:63; and equivalent structures.</p> <p><u>Description of the structure:</u>⁸ “a controller that can change one or more signals provided to one or more contact pins via one or more signal lines depending on card type.”</p> <p>(C) “means for mapping power, ground or data signals between said <u>signal lines</u> and said contact pins depending upon the identification of the type of memory card inserted into said port”</p> <p><u>Function:</u> “assigning power, ground and/or data signals to a plurality of signal lines and one or more contact pins based on the type of memory card”</p>	

⁷ Respondents object to this “description of the structure” based on the ALJ’s findings below, the ALJ determines that it is not necessary to rely on this “description.”

⁸ Respondents object to this “description of the structure” based on the ALJ’s findings below, the ALJ determines that it is not necessary to rely on this “description.”

<p><u>Structure includes at least the following:</u>⁸ patent Fig. 4; Fig. 5; 5:41-6:49; and equivalent structures.</p> <p><u>Description of the structure:</u>⁹ “a controller that can change one or more signals provided to one or more contact pins via one or more signal lines depending on card type.”</p>	
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The parties agree that these terms are means plus function terms governed by 35 U.S.C. § 112 ¶ 6. In construing a means-plus-function claim, the ALJ must first determine the claimed function and then identify the corresponding structure in the written description of the patent that performs that function. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006).

The parties’ dispute over the function of this means plus function element largely mirrors the dispute regarding the “to map” limitation discussed above. While Respondents adopt the claim language of this element as the function, they also include a further construction of “mapping” that is based on (and is nearly identical to) the construction they proposed for the “to map” limitations above. TPL, on the other hand, seeks to re-write the claim language to be consistent with the definition they proposed as an alternative definition for the “to map” limitations. As discussed above, most of the disputes between the parties regarding “mapping” are non-disputes. Moreover, the ALJ finds, as discussed above, that Respondents’ proposed construction of “mapping” is incorrect and seeks to read a number of improper limitations into the claim. As for TPL’s proposed construction of the function, it merely seeks to re-write the claim language, which as the ALJ described above, is largely self-explanatory and does not require construction. Thus, the ALJ agrees with Respondents that the function should be defined

⁹ Respondents object to this “description of the structure” based on the ALJ’s findings below, the ALJ determines that it is not necessary to rely on this “description.”

by the claim language. Accordingly, the ALJ construes the function of these claim elements to be: “Mapping power, ground or data signals between said [interconnection pins / interconnection means / signal lines] and said one or more contact pins depending upon on the identification of the type of memory card inserted into said port.” However, the ALJ rejects Respondents’ attempt to further define “mapping” for the reasons discussed above with respect to the “to map” limitation.

The parties’ remaining dispute is what the appropriate structure is for this claim term. “A structure disclosed in the specification qualifies as a ‘corresponding structure’ if the specification or the prosecution history ‘clearly links or associates that structure to the function recited in the claim.’” *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311 (Fed. Cir. 2012) (quoting *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)). “Even if the specification discloses a ‘corresponding structure,’ the disclosure must be adequate; the patent’s specification must provide ‘an adequate disclosure showing what is meant by that [claim] language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112.’” *Id.* at 1311-12 (quoting *In re Donaldson Co.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc)). Under 35 U.S.C. § 112 ¶ 2 and ¶ 6, therefore, “a means-plus-function clause is indefinite if a person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim.” *AllVoice Computing PLC v. Nuance Commc’ns, Inc.*, 504 F.3d 1236, 1241 (Fed. Cir. 2007) (citing *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1381–82 (Fed. Cir. 1999)).

The parties agree that the controller is at least part of the structure disclosed and linked to the mapping function in the specification. (CRB at 6; ROB at 21-24.) TPL contends that

“[b]ecause the controller chip or controller that facilitates the ‘mapping’ function and is not limited to a computer or microprocessor, the specification need not disclose an algorithm.” (CRB at 6.) Specifically, TPL argues that “[TPL’s expert], one of ordinary skill, has opined on this issue and agrees that the controller chip need not be a computer or microprocessor; rather, it can simply be a chip or integrated circuit that can manage, for example, flash memory card input / output.” (CRB at 6 (quoting CRB Exhibit A: Declaration of Dale Buscaino dated August 2, 2012 ¶ 20).) Thus, TPL concludes that no algorithm need be disclosed.¹⁰ Respondents argue that “[t]he Federal Circuit has consistently held that where the function of a means-plus-function limitation is performed by a general purpose computer or microprocessor, such as a controller, the structure includes not only the computer itself but also the algorithm disclosed in the specification by which the computer performs the claimed function.” Respondents contend that “the only disclosed structure having the capability to perform the mapping function is a general purpose controller, *i.e.*, a microprocessor, which must be programmed according to a particular algorithm in order to perform the mapping *depending upon the identification of the type of memory card inserted* (and as clarified by the file history of the ’443 patent).” (RRB at 24.)

The ALJ agrees with TPL that the controller is sufficient structure in this case. As the Federal Circuit has explained, “[t]he question [of whether a means-plus function claim is indefinite] is not whether one of skill in the art would be capable of implementing a structure to perform the function, but whether that person would understand the written description itself would disclose such a structure.” *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338 (Fed. Cir. 2008). Thus, while Respondents are correct that “the testimony of one of ordinary

¹⁰ Respondents in their reply brief attempt to exclude Mr. Buscaino’s (TPL’s expert) testimony as having been improperly raised in TPL’s responsive brief. Respondents also argue that TPL never identified the controller as the structure in their opening brief. The ALJ finds that whatever prejudice resulted from TPL’s altered arguments are made up for by granting Respondents leave to file a reply brief where they address these arguments. Moreover, Respondents have had ample opportunity to address these arguments in their brief and at the *Markman* hearing.

skill in the art cannot supplant the total absence of structure from the specification,” *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1302 (Fed. Cir. 2005), and “the structure disclosed in the specification be more than simply a general purpose microprocessor,” *Aristocrat Techs. Austl. Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008), “it is unnecessary for the written description to disclose additional detail [where] a person of ordinary skill in the art would have recognized the [device] shown in the patent was an electronic device with a known structure,” *Technology Licensing*, 545 F.3d at 1339. Here, TPL presented evidence that a person of ordinary skill in the art would understand that the claimed “means for mapping ...” corresponds to the controller disclosed in the specification. TPL presented further evidence that a person of ordinary skill in the art would understand what this structure was. This is sufficient to establish that the claims are definite. *See Telecordia Tech., Inc. v. Cisco Sys., Inc.*, 612 F.3d 1365, 1377 (Fed. Cir. 2010) (“Here, [Telecordia’s expert] testified that an ordinary artisan would know how to interpret the specification and actually build a circuit. The record shows that an ordinary artisan would have recognized the controller as an electronic device with a known structure. Therefore, the specification along with the figures shows sufficient structure to define the claim terms for an ordinary artisan in the relevant field.”) Respondents also presented expert testimony and prior submissions by Mr. Buscaino that appear to contradict his testimony in this case. “However, patents are presumed to be valid, and so [Respondents] bear[] the burden of proving that an ordinary artisan would not understand the disclosure.” *Telecorida*, 612 F.3d at 1377. At the very least, there are disputed issues of material fact as to whether the claim term is indefinite. *See Rembrandt Data Tech., L.P. v. AOL, LLC*, 641 F.3d 1331, 1343 (Fed. Cir. 2011). Accordingly, the ALJ construes the structure corresponding to the “means for mapping. . .” as a